

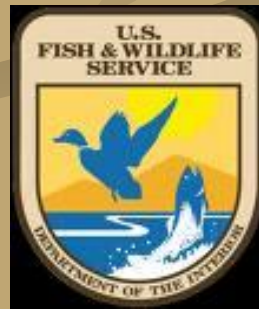


# Climate Change & The U.S. Fish and Wildlife Service

Climate Change Adaptation Planning for Land and Water  
Resources Management Agencies

July 14, 2011  
Washington, DC

Mark Shaffer, National Climate Change Policy Advisor



# Major Climate Impacts

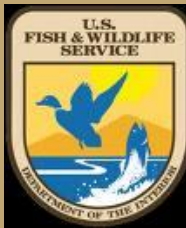
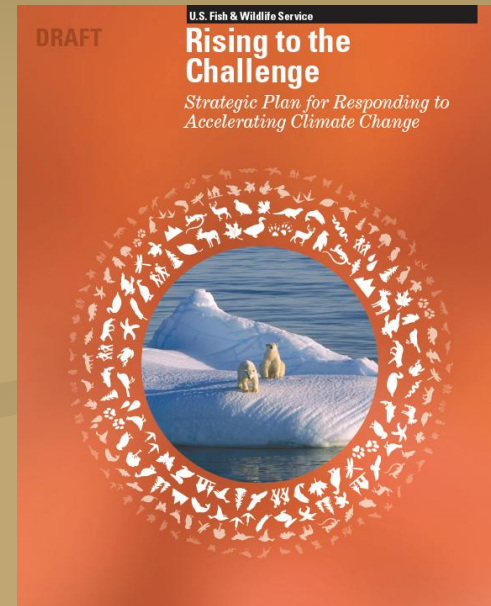
- The timing of biological events is changing
- The geographic ranges of some species are shifting
- Both effects can have significant impacts on
  - ecological integrity
  - species viability
  - harvest
  - disease

# Major Challenges

- Defining Vulnerability (Risk, Time)?
- Established Protocols/Methods/Tools
- What World Are We Planning For?
  - 24 GCMS
  - 2 Downscaling Approaches
  - 4 Emissions Scenarios

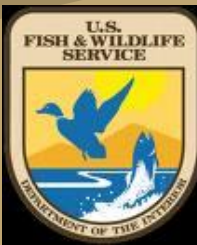
# Climate Change Strategic Plan & 5-Year Action Plan

- In 2008, the USFWS began to develop a Strategic Vision for addressing climate change effects on fish, wildlife & plants – established Strategic Plan Team
- This Vision is presented in: “Rising to the Challenge: Strategic Plan for Responding to Accelerating Climate Change”
- After extensive review the Plan is now final and is slated to be released in September 2010
- Key elements of Plan are already being implemented through 5-Year Action Plan and annual Climate Change Action Priorities



# USFWS Climate Change Strategic Vision

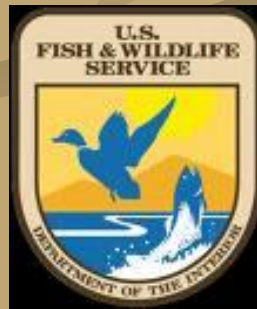
- Plan is rooted in our “*Climate Change Principles*”
- Plan calls for *Leadership and Management* investments to address climate change
- Plan has 3 progressive strategies to address climate change:
  - *Adaptation*
  - *Mitigation*
  - *Engagement*





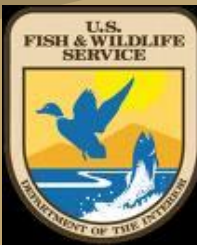
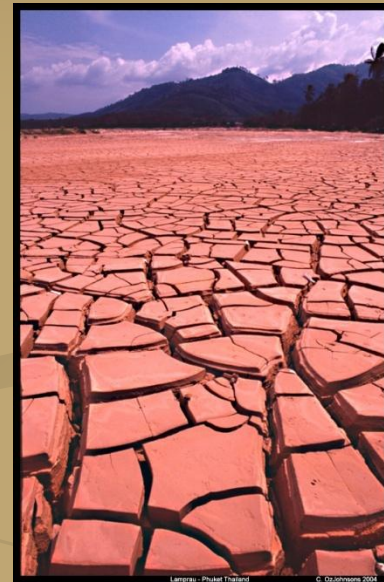
# Climate Change Principles

- Priority Setting
- Partnership
- Best Science
- Landscape Conservation
- Technical Capacity
- Global Approach



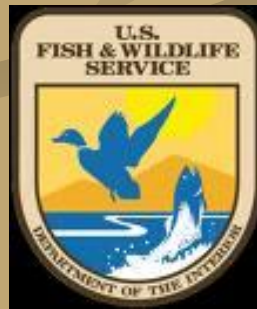
# Leadership and Management

- National Climate Team
- Regional Climate Teams
- Leadership at all levels
  - Washington Office
  - Regions
  - State Offices
  - Field Stations (Refuges, etc.)



# 3-Part Strategy

- **Adaptation:** Minimizing the impact of climate change on fish, wildlife, plants and their habitats through the application of sound science.
- **Mitigation:** Reducing levels of greenhouse gases in the Earth's atmosphere.
- **Engagement:** Joining forces with others to seek solutions to the challenges and threats to fish and wildlife conservation posed by climate change.





# Goals

## Adaptation

- Goal 1 - We will work with partners to develop and implement a National Fish and Wildlife Climate Adaptation Strategy
- Goal 2 - We will develop long-term capacity for biological planning and conservation design and apply it to drive conservation at broad, landscape scales.
- Goal 3 -- We will plan and deliver landscape conservation actions that support climate change adaptations by fish and wildlife of ecological and societal significance
- Goal 4 – We will develop monitoring and research partnerships that make available complete and objective information to plan, deliver, evaluate, and improve actions that facilitate fish and wildlife adaptation to accelerating climate change

# Goals

## Mitigation

- Goal 5 – We will change our business practices to achieve carbon neutrality by the Year 2020
- Goal 6 – To conserve and restore fish and wildlife habitats at landscape scales while simultaneously sequestering atmospheric greenhouse gases, we will build our capacity to understand, apply, and share biological carbon sequestration science; and we will work with partners to implement carbon sequestration projects in strategic locations



# Goals

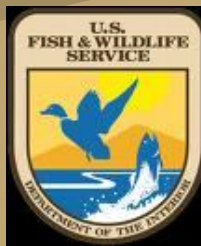
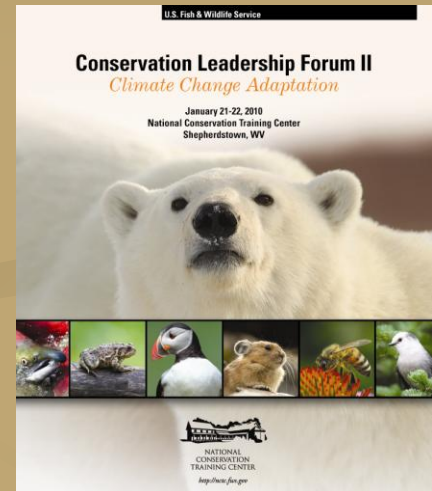
## Engagement

- Goal 7 – We will engage Service employees; our local, State, Tribal, national, and international partners in the public and private sectors; our key constituencies and stakeholders; and everyday citizens in a new era of collaborative conservation in which, together, we seek solutions to the impacts of climate change and other 21st century stressors of fish and wildlife



# Goal 1: National Fish, Wildlife, and Plants Climate Adaptation Strategy

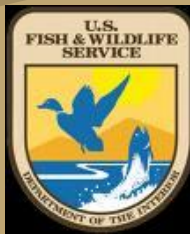
- In 2009, the Service embarked on a collaborative process to develop a National Fish, Wildlife, and Plants Climate Adaptation Strategy.
- Sponsored three Conservation Leadership Forums in 2009/2010 that brought together leaders of federal and State agencies, and NGOs to discuss development of a NFWCAS
- In January 2011 launched Intergovernmental Steering Committee
- Currently compiling draft strategy for agency review.



# Goal 2 - We will develop long-term capacity for biological planning and conservation design

## Objectives:

- Develop Regional Climate Science Partnerships
- Develop Landscape Conservation Cooperatives
- Develop Expertise in Adaptation Planning, including conducting Species and Habitat Vulnerability Assessments
- Incorporate Climate Change into Service Activities and Decisions
- Evaluate Laws, Regulations, Policies

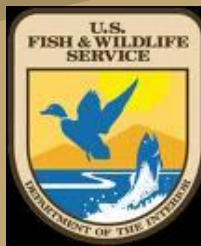




# Goal 3: Plan and deliver near-term and long-term landscape conservation actions

## Objectives:

- Take Conservation Action for Species That Will Be Negatively Affected by Climate Change
- Promote Habitat Connectivity and Integrity
- Identify and Fill Priority Freshwater Needs
- Manage Genetic Resources
- Reduce Susceptibility to Diseases



# Goal 3: Plan and deliver near-term and long-term landscape conservation actions

## Objectives:

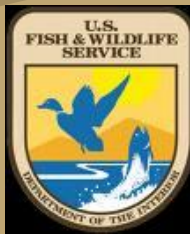
- Conserve Coastal & Marine Resources
- Address Fish & Wildlife Needs in Sustainable Energy Development
- Reduce Non-climate Stressors
- Foster International Coordination for Landscape Conservation



## Goal 4: Develop monitoring and research partnerships that inform and facilitate adaptation efforts

### Objectives:

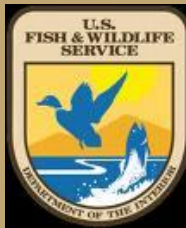
- Develop a National Biological Inventory and Monitoring Partnership
  - NWRS Inventory and Monitoring Program started in FY 2010
- Promote Abiotic Monitoring Programs
- Develop Research and Monitoring Capability for Use in Landscape Conservation
- Further Develop Collaborative Partnerships



# Goal 5: Achieve Carbon Neutrality by 2020

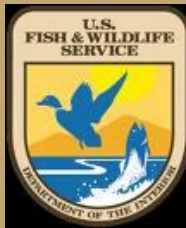
## Objectives:

- Assess and reduce the carbon footprint of our facilities, vehicles, workforce and operations
- Assess and reduce our land management footprint
- Offset the remaining carbon balance



# Goal 6: Build capacity to understand, apply, and share biological carbon sequestration science

- Develop Biological Carbon Sequestration (BCS) Expertise
- Develop Standards, Guidelines, and BMPs for BCS
- Integrate BCS into Landscape Conservation Approaches
- Facilitate BCS Internationally
- Facilitate BCS Research





# Goal 7: Engagement

## Objectives:

- Provide USFWS employees with climate change information, education, and training
- Share climate change information, education, and training opportunities with external audiences
- Forge alliances and create forums on climate change to exchange information and knowledge and to influence policy internationally



# Implementation

- Strategic Plan is being implemented through the 5-Year Action Plan that was developed concurrently with the Strategic Plan and through Climate Change Action Priorities
- Action Plan is for the 5-year period 2009-13
- Climate Change Action Priorities for one or two years

